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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/682,167	10/09/2003	Qi Cai	TI-35742	7303
23494	7590	07/19/2004	EXAMINER	
TEXAS INSTRUMENTS INCORPORATED P O BOX 655474, M/S 3999 DALLAS, TX 75265			NGUYEN, JOHN B	
			ART UNIT	PAPER NUMBER
			2819	

DATE MAILED: 07/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/682,167

Applicant(s)

CAI, QI

Examiner

John B Nguyen

Art Unit

2819

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-12 is/are allowed.
- 6) ☒ Claim(s) 13 is/are rejected.
- 7) ☒ Claim(s) 14-18 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>10/09/2003</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Specification

1. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.
2. Page 1 of specification, line 6-7 are missing "**Serial No.....**", and "**Filed on.....**". Correction is required.

Claim Objections

3. Claim 13, line 9 is objected to because of the following informalities: "the first successive subconverter stage..." should change to "the second successive subconverter stage...". Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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5. Claim 13 is rejected under 35 U.S.C. 102(b) as being anticipated by Thomas et al. (US Patent No US 6,124,818).

Regarding to claim 13, Fig. 4, Thomas et al. disclose a pipelined analog to digital conversion system, comprising:

a first successive approximation subconverter stage (402) comprising a first capacitor array (page 7, line 49-50), the first successive subconverter stage receiving a conversion system analog input and providing a first multi-bit subconverter stage digital output representative of the conversion system analog input (page 7, lines 44-60) and a first residue output (page 8, line 1-8) representative of a difference between the conversion system analog input and the first subconverter stage digital output; and

a second successive approximation subconverter stage (404) comprising a second capacitor array (422-426), the second successive subconverter stage receiving the first residue output (page 8, line 1-2) and providing a second multi-bit subconverter stage digital output representative of the first residue output (page 8, line 1-12).

Allowable Subject Matter

6. Claims 1-12 are allowed.

The following is an examiner's statement of reasons for allowance:

The prior art fails to teach a plurality of cascaded successive approximation subconverter stages comprising a switched capacitor system receiving a thermometer coded intermediate digital signal, wherein the switched capacitor system comprises a switching system coupled to the second terminals of the

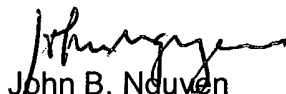
plurality of capacitors, the switching system selectively coupling individual capacitors to one of the switched capacitor system input node, the switched capacitor system output node, a first reference voltage, and a second reference voltage according to the thermometer coded intermediate digital signal (claim 1).

7. Claims 14-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. (See enclosed Form PTO-892).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John B Nguyen whose telephone number (571) 272-1808. The examiner can normally be reached on 8AM-4: 30 PM M-F.


John B. Nguyen
July 12, 2004